Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CW#15H: Pythagorean Theorem

Geometry

SWBAT use Pythagorean Theorem to find the missing side length of a right triangle.

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| Part 1 Directions: Use the Pythagorean Theorem to find the length of the hypotenuse. Keep answers in radical form. | | | |
| Example 1: | 1)  8    6 | | 2)    24  10 |
| Example 2: | 3) | | 4) |
| Part 2 Directions: Determine if the following triangles are right triangles. (Triangles are right triangles if Pythagorean Theorem is true: .) | | | |
| Example 3: | 5) | | 6) |
| Part 3 Directions: For each word problem, (1) draw a diagram, (2) label the givens & the unknown: *a* or *b* for the sides *adjacent to* the right angle, *c* for the side *opposite* the right angle (aka the hypotenuse). (3) *Solve!* | | | |
| Example 4: The top of a ladder rests against a wall, 23 feet above the ground. The base of the ladder is 6 feet away from the wall. What is the length of the ladder? | | 7) A woodworker is building a handicapped ramp from the ground to the entrance of the building. The ramp’s incline begins 20 feet from the base of the building. The entrance is 3 feet above the ground. What is the length of the ramp rounded to the nearest hundredth? | |

CLASSWORK- DO NOT WRITE ON!

CW#13: Pythagorean Theorem

Geometry

Answer the following problems in your notebook.

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| 1 Point Questions! Label sides a, b & c (note: you can interchange a & b). Use the Pythagorean Theorem to find the length of the missing side. Keep answers in radical form. | | | | Score: \_\_\_\_\_ / 6 | |
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| 2 Point Questions! *Show your work!* | | | | Score: \_\_\_\_\_ / 8 | |
| 1. Find the perimeter of the triangle below. *(Hint: the small triangles inside the large triangle are both right triangles. Use this to find the sides you need to calculate area.)* | | 1. A 16 foot ladder rests against the side of the house, and the base of the ladder is 4 feet away. Approximately how high above the ground is the top of the ladder? 2. 240 ft 3. 20 ft 4. 16.5 ft 5. 15.5 ft | | | |
| 1. State if the following are the side lengths of a right triangle (yes/no). *Show work to justify your answer.* 2. 36, 48, and 60 \_\_\_\_\_\_\_\_\_\_ 3. 10, 11, and 14 \_\_\_\_\_\_\_\_\_\_ 4. 3, 6, and \_\_\_\_\_\_\_\_\_\_ | | 1. A triangular section of steel is needed to build a bridge. Two of the sides of this section meet at a 90-degree angle. Which of these could be a possible set of side lengths for this section?   A. 2 ft, 3 ft, 4 ft  B. 12 ft, 16 ft, 20 ft  C. 5 ft, 11 ft, 12 ft  D. 3 ft, 4 ft, 6 ft  E. None of the above | | | |
| 3 Point Questions! *Sho’ yo’ work!* | | | Score: \_\_\_\_\_ / 15 | | |
| 1. A *Pythagorean Triple* is any group of three positive integers (whole numbers) which satisfy the equation *a*2 + *b*2 = *c*2, and therefore can be the lengths of the three sides of a right triangle. Which of the following is NOT a Pythagorean Triple? Show your work. Check the ⬜ if it is a triple.   *Ex: 3, 4, 5 and* 🗹  A. 5, 12, 13 ⬜  B. 8, 15, 17 ⬜  C. 7, 24,25 ⬜  D. 5, 10, 15 ⬜ | | 1. (i) In ALL right triangles, what is a characteristic of side *c*?   A. It is always even.  B. It is always the largest of the three.  C. It is always the smallest of the three.   1. It is always an integer.   (ii) In Pythagorean triples, what is special about the value of *c*?  A. It is always even.  B. It is always the largest of the three.  C. It is always the smallest of the three.  D. It is always an integer. | | | |
| 1. A rectangular field shown below is 40 feet wide and 30 feet long. Joe and Jenna are at point B. Joe walks to point C by walking along the edge of the field through point A. Jenna walks to point C by walking diagonally across the field. About how many meters more does Joe walk than Jenna?   A B  C D | 14) What is wrong with the figure below? Explain! | | | | |
|  | Directions: Complete Textbook p. 430 – 432 in your notebooks:  #8 – 13, 24, 26 – 27, 32, 34 |  (3 points each) \*\*Challenge: 28 – 30\*\*   (4 points each) | | | |
| What…you finished *ALL that (including textbook)?* You think you can handle *5-point doozies?* Just ask! | | | | |